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IN MEMORY OF DR. JOHN GREEN.

A meeting in memory of Dr. John Green was held by the Washington University Medical School in Graham Memorial Chapel at Washington University on the birthday of Dr. Green, Thursday, April 2, 1914. Acting-chancellor Hall presided, and addresses were made by Dr. Washington E. Fischel, Mr. E. A. Engler, Dr. A. E. Ewing and Mr. William Trelease, in commemoration of the life and work of Dr. Green as a physician, a scholar and a teacher.

The presiding officer, Frederic A. Hall, Acting Chancellor of Washington University, opened the exercises of the evening with the following remarks:

We are met here to honor the memory of a distinguished citizen, a man characterized by inventive genius, marvelous skill, and great erudition. The world recognized its obligations to him in universal adoption of some methods which he originated. People from afar sought the benefit of his dexterity, and his broad learning won the respect of all those who knew him. It was eminently fitting that his colleagues should arrange a service in his honor, to express their appreciation of his worth and the esteem in which he was held. It was eminently fitting that the exercises should be under the auspices of the University which he served efficiently for so many years, and it was eminently fitting that these exercises should be held in this building, an edifice dedicated to the exaltation of noble deeds.

My first acquaintance with Dr. Green was begun about twenty years ago, when I met him at a reception given at the residence of Chancellor Chaplin. It was my pleasure that evening to converse with Dr. Green for an hour or so, and I there began to have that high esteem, almost reverence, for his great learning in many things outside of his own profession. My vocation was

the study of Greek and my particular vocation the study of Greek tragedy, and yet I found him able to make suggestions with reference to Greek tragedy which had never occurred to me. He had as an avocation delved into Greek tragedy, and from his avocation he was able to bring help to me in my vocation. In later years I found his knowledge of classical archaeology unusual for its breadth and depth,—and yet these were only two lines of the many which he touched outside of his own field.

It is not my province, however, to speak at length with reference to him in whose honor we meet. Others have been selected who will speak as representing both colleagues on the medical faculty and friends of intimate acquaintance and long standing. Dr. Fischel and Dr. Ewing as representing the medical profession, and Dr. Engler and Dr. Trelease as representing close friends, will speak, each as he may wish, and it is quite possible that the four will repeat each other, but in so doing they will only emphasize the striking characteristics of him of whom they speak. It would ill become me to introduce the speakers of the evening; they are as well known to the audience as is the one who would introduce them, and it would be presumptuous on my part to endeavor to anticipate what each may say.

JOHN GREEN.

AN ADDRESS BY WASHINGTON E. FISCHEL, M.D.

For thirty-six years on every second day of April it has been my pleasure to grasp the hand of Dr. John Green; and for all these years I have felt it a great privilege to know that I could call him friend.

To-day, the 79th anniversary of his birth, I am here with you to pay tribute to his memory and to recall something of what his life has meant and will continue to mean to us. Noted as he was noteworthy; cast in a mould so peculiarly his own; registering in early life traits that have made him a unique and distinguished personality; endowed with an intellect directed to the best thoughts of the best thinkers in science, literature and art; not only an exponent of scientific progress, but an originator of scientific truths,—his passing means the closing of the ranks of the most representative men of the Medical Guild in the Mississippi Valley, during the past five decades.

Dr. Green was the principal representative in the State of

Missouri of the large family of descendants of that Dr. John Green who was a member of the Massachusetts General Court in 1777. He was eighth in descent from Thomas Dudley, second Governor of Massachusetts Bay Colony; seventh in descent of Jonathan Sprague, who served in King Phillip's War, and fourth in descent from Judge Brigadier General Timothy Ruggles, President of the Stamp Congress. He was a nephew, grandson and great grandson of Doctors John Green, and represented the fifth generation of physicians bearing the name of Green, completing with the other members of his family an unbroken medical service of 135 years in the County of Worcester, in which he was born. He was the son of James Green, of Worcester, and Elizabeth (Swett) Green, of Dedham, Massachusetts. In making note of Dr. Green's forebears, I am conscious that were he with us he would disparage any reference to his ancestry, believing so firmly as he did, that not birth but worth and work accomplished must be the basis of man's recognition. To me it seems particularly fortunate to have been put in possession of the facts as related. Coming from such a lineage of strong men, men permeated by the love of freedom and truth, men of indomitable will and courage, men of culture and honesty, doubtless also of many idiosyncracies, we can the better understand how it happened that our John Green was cast in the mould by which we knew and loved him. He was born in Worcester, April 2nd, 1835. Educated in the public schools there, preparatory to entering Harvard College in 1851, he was graduated A.B. Harvard in 1855; S.B. Harvard in 1856; and M.D. Harvard in 1866. He was admitted a Fellow of the Massachusetts Medical Society by examination in 1858, and spent the next two years in professional study in London, Paris, Berlin and Vienna. In 1861 he began the practice of medicine in Boston, where he filled the position of attending physician and attending surgeon to the Boston Dispensary and of Recording Secretary to the Suffolk District Medical Society. He was also member of the Boston Society of Natural History and of its Council, member of the Boston Medical Association, of the Boston Society for Medical Observation (later merged into the Boston Society for Medical Improvement), and (Delegate) of the American Medical Association 1864-1865. During the Civil War he served as Acting Assistant Surgeon, U. S. A., in the armies of the Tennessee after the Battle of Pittsburg Landing, and at Frederic City, Maryland, after the Battle of Antietam. In 1865 he again visited Europe

for special study, principally in Ophthalmology, in London, Paris and Utrecht; and in 1866 he established himself in practice in St. Louis.

In 1868 Dr. Green was married to Miss Harriet Louise Jones, eldest daughter of George Washington and Caroline (Partridge) Jones, of Templeton, Worcester County, Massachusetts, who with their two children, John and Elizabeth Green, survives him.

In his later life he was a member and founder, in 1894, of the Society of the Sons of the Revolution in the State of Missouri; and also a member, a Founder in 1894, and Deputy Governor of the Society of Colonial Wars in the State of Missouri.

As already stated, Dr. Green identified himself with the profession in St. Louis in 1866. Although he had completed his course of studies in the Harvard Medical School in 1858, he was not in sympathy with the requirements for graduation and—honest man that he was—did not hesitate to declare his disapproval, to the extent of refusing to accept his degree. That he had worked hard and with credit to himself was at once demonstrated by his being admitted on examination to the Massachusetts Medical Society. This gave him the right to practice. Later on he changed his attitude. He appreciated the movement in the Medical School, begun in 1862 by President Hill, acting President Andrew Preston Peabody, and others, which culminated in 1870 in the great reform in medical education, effected under the leadership of President Eliot and the Dean of the Medical School, Calvin Ellis. There can be no doubt that he came to place a higher estimate on the value of the education given by the Harvard Medical School; and also realized the advantage to him of the degree of M.D. from an institution of the standing of Harvard University when he was about to go to St. Louis to live. This explains why eight years lapsed between the completion of his course of instruction in Medicine and the acceptance of his degree of M.D. What a fine illustration of Dr. Green's uncompromising honesty!

How great his achievement in the line of his special work and the immensity of his working faculties in other fields of research, will be exploited by friends who can better do him justice than I can. He never prided himself on account of honors. Many scientific bodies of men honored themselves in honoring him by electing him to be of their number. He was perhaps most proud of the honorary LL.D. bestowed on him by the Washington University and by the Missouri State University.



To be honored by the Directing Boards of the Universities who best knew him and what he accomplished was in his judgment a gift to be prized. Those who knew the professional work Dr. Green accomplished day by day, except for a well earned summer's rest, cannot help believing that he must have enjoyed the sense of daily duty faithfully performed. There was in him never a thought of an expanding balance in the bank. His heart was in his work. Duty was never irksome drudgery. The tax on his strength, the terrific nerve force expended in his painstaking ministrations to scores of both rich and poor, proved at times so great an ordeal that he became severely blunt in his exactions of obedience and discipline. It was not with the poor that he displayed his nervous tension in caustic phrases. He sympathized too much with their misfortune and physical affliction to wound them by unsympathetic words. Few knew of his generosity to his poor patients. He not only housed them, but when necessary assisted them financially and provided them with special nurses when the exigencies of their condition made this desirable.

I recall with a feeling of great affection for Dr. Green an act of sympathetic consideration, of the big warm-heartedness and helpfulness of the man. Some years ago Dr. Green appeared at my house at two o'clock in the morning. It was a bitter cold night. Apologizing for awakening me, he asked whether I would see one of his poor patients with him, for whom he feared she was seriously ill. I accompanied him to a boarding house, where in a very small rear room, overheated and practically impossible of ventilation, I found an old woman in an attack of pneumonia. There was no one on hand to care for her. This is what happened. Dr. Green called the landlady, and finding out that a large front room was unoccupied, immediately engaged it, and the patient was forthwith carried into comfortable lodgings. He promised the attendance of a trained nurse later in the morning, and in the meantime assumed the responsibility of carrying out my instructions. There was no chance for me; the poor woman had in the first instance put herself in his care, and it was his privilege as well as his duty to tide her over that night. No reasoning to the contrary would prevail. It was truly a benediction to witness his tenderness and kindness; how he gladly deprived himself of a well-earned sleep to minister to this suffering fellow creature without a thought of self. It was ever so. He was always pedantically conscientious in his pro-

fessional attention to those who came to him without means, without prestige—just to him—knowing that they would receive at least as skilled and kindly attention as the more fortunate of human kind. Discrimination was an unknown word in his professional relation with his clients. Each patient was made to feel that he or she was the especial object of his solicitude, and that every possible effort would be made to secure a successful result. It matters not what Dr. Green's outer shell of manner, his most pronounced critics were always glad to concede that his personal convictions were honest convictions, and that his expressions of them were as fearless as they were honest.

We will admit that Dr. Green was severe, yes, a trying taskmaster with those who thought they were entitled to preferential consideration and forbearance. He was often wearied by unnecessary questions and irrelevant statements when in the midst of a tremendously busy day's work. It was then that he would burst out in exclamations that would strike hard and cut deep into the vanity or self-conscious pride of the offending, or—better said—the offensive questioner. On one occasion the wife of a prominent townsman was particularly insistent in plying absurd questions and volunteering her diagnosis of her eye condition. Dr. Green at first politely requesting her not to disturb or distract him by needless questioning and personal experiences, finally told her—the story goes still politely—that he much preferred to have nothing more to do with her. The woman nothing daunted by his refusal to continue his professional services, proved not averse to go on with her dissertation on her case. That proved too strong a temptation for an honest expression of his conviction. Looking up from his record of another case to which he had in the meantime directed his attention, he burst out with the exclamation: "Madam, go home and tell your husband he has a fool for a wife." Who but Dr. Green could have dispatched such a message to a husband by such a messenger? I relate this story as illustrative of the courage of our friend. Perhaps undiplomatic; but the applied epithet was correct, as on a subsequent occasion the husband, in a small gathering of friends, admitted the fitness of Dr. Green's allegation.

Dr. Green pre-eminently represented the type of physician who combined great learning and great skill. His scholarship placed him in the foremost class of men of scientific attainments.

A teacher in medicine since 1874; first a lecturer, and from

1886 to 1899 a professor, and from then until 1911 Special Professor on Ophthalmology; always—except for a period of two years—connected with what is now the Medical Department of the Washington University—his courses were distinguished by reason of his crisp, terse, vigorous English, and the great care and skill of his operative procedures. However, his teaching was not confined to students in Medicine. Up to within a few days of his final illness, he kept up his contributions in his special line of work—contributions which will make him a historic figure in the science of Ophthalmology. The scrupulous accuracy of his knowledge made his office the Mecca of many of his more intimate colleagues and friends; and the influence of his own vigorous and uncompromising standards has left its impress on the character of the work of the younger men who have at different times been intimately associated with him.

Those who have enjoyed service in the wards of the hospitals with Dr. Green, will always recall the tenderness and kindness of his attention to his patients. A sincere and grateful glance meant more to him than gold. This service covered a period of almost forty years, and comprised his work as Ophthalmic Surgeon and Executive Officer to the St. Louis Eye and Ear Infirmary (later transferred to St. Luke's Hospital, and afterwards merged into the O'Fallon Dispensary of the St. Louis Medical College, now the Medical Department of the Washington University), and as Consulting Ophthalmic Surgeon to the St. Louis City Hospital; and, since 1894, Consulting Surgeon to the Barnard (Free) Skin and Cancer Hospital.

Surely this community will not easily forget Dr. Green's self-imposed labors in the wards of their hospitals. A grateful remembrance of the tribute of work well done by a really great physician should be his. These services were, however, only a part of his activity. When at some future time a historian comes to write of the advances made in medical teaching in the St. Louis Medical College (since 1891 the Medical Department of Washington University), that history will be replete with the unwavering steadfastness to rigorous scientific standards. Dr. Green proved a mountain of strength in the furtherance of ideas which after twenty-five years of waiting have found fulfillment in what Washington University has made of its Medical Department. It must not be forgotten that the road for a progressive betterment of facilities for teaching, for teachers in the essential branches of medicine, and for a higher standard for entrance

requirements was made possible chiefly by the courageous attitude taken by Dr. John T. Hodgen, Dr. Gustav Baumgarten, Dr. Henry H. Mudd and Dr. John Green. To whatever Dr. Green directed his attention, that commanded the attention of his colleagues.

But justice cannot be done the memory of Dr. Green, by reference to him only as a physician. A tribute must be paid to the universality of his learning; to his wise counsel and his warm heart; his uncompromising honesty, and his consistent courage. He was an honored and wise teacher; a pioneer of the best Medical Education; but above all else he was a humane man, and a great good friend.

Would that I could express what I feel for him as a friend; and as a friend to a friend. Just as his moral courage was so intrinsically a part of himself that he was unconscious of it, so was he also unconscious of sacrifices made for friends whom he trusted. Those who knew him best loved him most.

JOHN GREEN.

AN ADDRESS BY E. A. ENGLER, LL.D.

I shall content myself, and I hope that I shall not disappoint you in so doing, by relating an incident in the career of Dr. Green which I consider impressive and significant of some of the dominant traits of his character—his industry, his perseverance, and his sane inquisitiveness; and I relate this incident only because I feel sure that no one else has the information which would enable him to relate it.

When Dr. Green was approaching the age of sixty years, that is to say, when I was some twenty years or so younger than I am now, he called on me one afternoon in my office, as he was in the habit of doing from time to time when he wished to get away from his grind, and his occupation permitted, and said to me quite familiarly, "John" (and he called me "John" because that was not my name), "I have come to make a confession to you and to ask your help." I replied, "Well, Dr. Green, both phases of that statement interest me very much."

"You know," said he, "when I was a youngster I went to Harvard College for an education. Now you may not have discovered it, but it is a fact, that the teaching in Harvard College and especially the teaching in mathematics has improved since I was a college student."

To this I replied, "I hope, Doctor, that what you say is true, because I myself am engaged, and have been all my life engaged, in attempting to improve the teaching of mathematics."

He continued, "We had a prescribed course of study in those days, and, therefore, I had to study mathematics. I suppose I had about as much brains as the rest of the fellows; at all events, I did not consider that I was a fool; but they had a habit of turning loose on us the young fellows who had just graduated from the college the year before and they were to teach us mathematics. As you know, I have the kind of mind that is not satisfied by a statement which I do not understand. A lesson would be assigned to us from a text book and we would be expected to come to the next exercise with that lesson learned. I used to try for a while to learn the lessons, but had difficulties. Then I would come to the instructor for help; I was invariably told to go and read the book. I had tried to read the book and could not understand it, and it was clear to me that the teacher did not understand it because he was unable to help me. Finally I concluded there was no use in my attempting to learn mathematics. Not getting any good out of it, I became disgusted with the whole field of mathematics and so would do only the work required so as to pass. The way I did this was not to work at all during the ordinary term, but a week or two before the examination I hired a coach. He was a shrewd man, who knew what questions would be asked at the examination, and was skillful enough to fill me up with the correct answers; and in that way I scraped through. So I got through Harvard and received my bachelor's degree. I thanked my stars I did not have to bother with that matter any more; that was behind me.

"You know I profess to be an oculist, and have been doing something in that line for a number of years; and now I am confronted with a curious situation. I find, especially of late, that not only are nearly all the advances that are made in my science expressed in the publications in mathematical formulæ, which I cannot read, but even the text is so stated that it means very little to me, and I really don't know what I am to do. There is another phase of it. I have got a number of things in my head which I would like to express to other people and I find that I cannot do it because the expression of them requires a knowledge of technical mathematical language."

I listened with great interest to this story and I said, "Well, Doctor, what do you want me to do?"

He said, "I want you to tell me how I can learn mathematics."

I replied, "Doctor Green, I can tell you very simply how you can learn mathematics."

I told him that at the University of Berlin, while I was there, one of the most distinguished mathematicians in the world began a series of lectures by this statement (in German, of course; I will translate it), "Mathematics is the science of things that are self-evident."

So I said, "That being the correct definition, and I thoroughly agree with it, you can learn mathematics very easily; but I know no high road to that accomplishment. The only way is to begin at the bottom, if necessary, go through the drudgery and you will learn it in spite of yourself."

"Well," he said, "that is what I want to do; but I want you to tell me how to do it."

"Very well," I replied; "if you are in earnest I am ready to help you."

I went to a book case and got out a rather comprehensive treatise on Algebra written by an Englishman, far too heavy for the ordinary student.

I said, "Here is a book. Read it."

He said, "I will put on this all the time I can spare. I have evenings and Sundays."

I said, "Read this book. I think you will not read more than a page and a half before you find something that will bother you. Make a note of the difficulty. Proceed in this manner till you feel that you have got as far as you can go without help, and then come to me."

He started in. I would see him some weeks once, some twice, and each time he would have a lot of questions to ask me. I helped him over the difficulties. He went at it with an avidity and earnestness that I have never seen equalled by any student that has come under my instruction.

After having gone through the subject of Algebra he did a similar thing with Trigonometry, Analytic Geometry, and the Calculus, and he got such a hold on these subjects that he could not only read intelligently the writings in his own line by others, but began writing himself and introduced mathematical formulæ and technical mathematical language to such a degree that it attracted attention of oculists all over the world.

By that work, which he continued directly with me for four or five years, and which he kept up on his own account till the time

of his death, he got into the habit of looking at things from the mathematician's point of view, so that he used, in talking with me at least, mathematical phrases and terms which expressed his ideas so accurately that it would be scarcely possible to improve on his diction.

This incident has always seemed to me a most remarkable thing, and it has impressed me particularly because of Doctor Green's age when he began this study, and his persistence in carrying it forward to a useful end. I shall make no further comment upon it.

JOHN GREEN.

AN ADDRESS BY A. E. EWING, M.D.

In order to correctly understand and fully appreciate the life and the work of Dr. Green, it is necessary to return to the time of his early studies in ophthalmology, his ophthalmic surroundings, the men of great mental caliber with whom he was associated in Europe and in America, and the incentives that, combined with his own interest in science, actuated him to accomplish the various things for which ophthalmology must give him credit.

After leaving Harvard, equipped with the education necessary to the attainment of the A.B., the S.B., the A.M., and the M.D. degrees, and a finishing course in Europe, together with a second course in Europe five years later, which he seems to have devoted wholly to ophthalmology under the direction of Donders and Snellen, he located in St. Louis in 1866, and entered upon the practice of otology and ophthalmology, ophthalmology being the specialty of his choice, probably because it offered a wider and a more intricate field for investigation, and because of the many new lines of research in it that were being pursued at that time.

Anatomically the eye was well understood, its surgical realm had been very thoroughly explored, and regarding its physiology there was much that was comprehended; but in 1851, fifteen years previous to the second European trip, Nature had conferred on one of her most gifted sons the privilege of inventing the ophthalmoscope, which gave to ophthalmic science a wholly new method of diagnosing a number of heretofore obscure ailments.

The medical world had not yet recovered from its astonishment at its ability to obtain a perfect view of a living nerve in

the human body, and living and functioning bloodvessels, and it was still bewildered with the fact that in this same field also could be observed pathological changes which were unquestionably similar to those that took place elsewhere in the tissues of the living organism. In addition to this the new instrument possessed the further advantage of being an aid in determining the refraction of the eye. For twenty years or more the great ophthalmologists of this period were vying with one another in the invention of ophthalmoscopes. Donders had a clip behind the mirror for holding the trial case lenses. Ruete, Jaeger, Liebreich, de Wecker, Carter and others, each had an invention of his own; while among the inventors in this country were Knapp, Noyes, Loring and others, including Dr. Green, who constructed one for himself, which he used for many years, but I think it was never placed in the hands of an instrument maker.

The positive history of spectacles dates to early in the fourteenth century, and they were probably employed previous to this. Much was known of refraction and much regarding accommodation, and something of astigmatism, beginning with Thos. Young in the early part of the nineteenth century; but it was reserved for Donders to thoroughly clear up the whole subject of refraction in his monumental work "On the Anomalies of Accommodation and Refraction of the Eye," published in 1864. Here again was a revelation to the medical world of many of the heretofore unexplained causes of headaches and inability to use the eyes, and an elucidation of the absorbing and puzzling subject of strabismus. The expounding of this whole subject was for Donders, but the means for its practical application was offered by his illustrious contemporary and associate, Snellen, in the form of test-types and a formula by which the visual power could be expressed in numerical terms. The practical test for astigmatism had as yet not been satisfactorily devised, and it was one of the subjects of research at the time that Dr. Green had the honor of being a pupil under these two high priests in ophthalmology. To him belongs the credit of perfecting this test in the form of several charts, and so thoroughly perfecting it that, like Snellen's letter tests and formula, no one has been able to produce anything better. To the correction of astigmatism these charts bear the same relation that test letters bear to the correction of myopia or hypermetropia. They apply to every variety of astigmatism, and reveal also in its correction the subtle role played by the accommodation.

Having accustomed himself to clearness and accuracy in his modes of thinking, the unequal intervals that obtained in the notation of test letters were an annoyance, and prompted him to seek a ratio by which such letters would be uniformly graded in size, with a uniform relative interval in their distance one from the other. He proposed two geometrical ratios, both of which have been adopted by the American Ophthalmological Society and one by the leading ophthalmic society in France. In the construction of test letters he also suggested that only those square and round letters should be used, the limbs of which would come within the square of the five minute test object angle and be practically of uniform size. He further devised these letters in two forms, the Gothic or Antique and the block letter. In both forms the letters are more symmetrical and better proportioned than most of the test types employed, those of Snellen not excepted. He also was the first to suggest and to put into practice the arrangement of single letters of varying sizes in linear series, in order to "shorten the time of the initial test" and "minimize fatigue to the patient".

Donders' work on Refraction and Accommodation clearly demonstrated the causes of strabismus and raised the question of accommodative strain in the action of the muscles. This led to exercises with the stereoscope for the detection of disturbances in binocular vision and for its restitution. For this purpose Dr. Green devised a number of the best charts extant.

The same trait of accuracy that made the test letter interval irritating to him, caused him to be irritated also by the gross manner in which test lenses in trial cases were constructed for the use of ophthalmologists, because of the centers of the lenses being too distant from one another, and resulted in his suggesting a far more satisfactory method of approximating the lenses in the trial frame by means of a thin flange on the rim of the trial lenses, and also a trial frame containing a groove that would hold two lenses face to face in the single groove. With the recommendation of his friend, Jackson, that plano-convex and plano-concave lenses for trial cases should supplant the ordinary double convex and double concave forms in general use, he adopted the suggestion for his thin flanged rim and had several trial cases constructed for his own use. Trial cases with lenses mounted in this manner are now regularly on the market, and are far superior to those with the old mountings.

In all of this work involving optical problems, and in many

other articles, his vast knowledge of optics is apparent. In this branch of ophthalmology he was unquestionably without a peer among the ophthalmologists in this country.

Having served in his younger days as an apothecary with his father, he became an adept in chemistry, as was well recognized by the druggists and chemists of his acquaintance. By reason of the knowledge thus acquired, the ophthalmic pharmacopœia has been enriched by a permanent solution of atropin in castor oil, and with the introduction of cocain this drug was added to the solution. In iritis and in certain forms of corneal ulceration this is a most valuable remedy, due to the oil remaining in the conjunctival sac, thus preventing the atropin from becoming an irritant to the pharynx, as often happens with the aqueous solution.

The influence of his training under Mr. Bowman, the inventor of lacrimal probes, and the first demonstrator of the anterior limiting membrane of the cornea, which bears his name, is shown by the interest taken in the work of the great teacher. When important decisions were to be made as to the management of certain cases, Dr. Green would often refer to what would have been the opinion of Mr. Bowman under similar circumstances. In the management of lacrimal duct disorders, he adhered very closely to the practice of Mr. Bowman, deviating from it only in exceptional cases by employing the soft lead styles of his own invention, through which he became a credit to his famous master.

In the manipulation of the eyelids and in the fixing or handling of the globe, no touch was more delicate and no hand more steady than his. In operating, every movement was guided by the precision of exact knowledge. Ophthalmic surgery was amplified by the operation which he devised for entropion of the upper lid, which was suggested to him by the abhorrent cases of lagophthalmos that obtained throughout this region at that time from the performance of operations which demanded loss of the lid tissues. In comparison with these it was a long stride toward a perfect procedure. In fact, in a majority of the cases in the hands of skillful operators, it was a perfect procedure, and when resulting in partial failure there was always the possibility of its repetition without injury. Many years later, while pursuing his historical studies, he became persuaded that authority existed which pointed to the same procedure as being the property of the ancients, and in a paper discussing the subject he relinquished

his claim to it. As no ancient diagrams are extant to demonstrate the ancient method of operating, and as it is difficult to be wholly guided by the interpretation of a term employed so long ago as to the exact mode of procedure, and as he was the unquestioned inventor so far as our own epoch is concerned, with every detail clearly set forth, it is but just to him that it be called after his name, and as such it is recognized in all of our best unbiased American text books and systems of ophthalmology. It is the safest and most humane operation for dealing with entropion, and for its execution there is no better instrument than the scalpel originated and employed by him.

The honor and the admiration which he deferentially accorded to his eminent teachers was reciprocated by them in the kindness with which his students were received by them when visiting Europe for a finishing course. Both Snellen and Donders were very fond of him, as were also Javal and de Wecker, and the immortal Helmholtz did him the honor to especially seek him out in St. Louis when touring the United States twenty years ago.

His kindness to the younger men of his acquaintance is best voiced in a recent letter to me from Dr. Carl Koller, the discoverer of the anæsthetic properties of cocain for the eye, when he writes, "This is not exactly an occasion for condolence. Dr. Green died after a life rich of endeavor and fulfillment, honored and appreciated by those best able to judge. For my part I wish to give expression to the debt of gratitude which I owe to Dr. Green for his kindness towards me, and for the powerful assistance he gave me for establishing myself on these shores. I shall always keep that in mind, and keep of his strong personality a vivid and grateful memory."

For the honorable, upright practice of medicine he was ever the staunchest advocate, and for the best possible attainments in medicine. It was this that always kept him in the lead, in the advanced medical educational interests in St. Louis. He is spoken of as the pioneer oculist west of the Mississippi. It was this devotion to the highest and noblest in medicine, and his contributions to ophthalmology, that earned for him this honorable title. Now that he is no longer with us, we not only recognize him as a pioneer, but we hold him in fondest memory as one of the great oracles in ophthalmology.

Dr. Green was ever faithful to the American Otological and the American Ophthalmological Societies, and to the men that composed them, considering that they honestly encouraged the

highest order of research and progress. For many years he was on the committee of membership of the American Ophthalmological Society. One of his assistants relates that at a clinic in Europe he met an ophthalmic practitioner from another American city, who, in speaking of Dr. Green, remarked, "While he was on the membership committee of the Ophthalmological Society I was always left out, but when he got out I got in." It is an evidence of the care exercised in the Society's selections during the term of Dr. Green's service. This care in the selection of his ophthalmic and medical companions was often the cause of implacable enmity on the part of those who deemed themselves worthy of recognition. On his part, however, it was always a defensive and not an offensive manœuvre by which he kept them aloof, and he never permitted their importunity to disturb the high ideals that he had set as the standard for his associations.

In the development of the Medical Department of Washington University he hoped to see his dreams of highest efficiency in every department realized, and particularly along the lines of teaching and investigation. To this end, out of his own pocket, he purchased in 1888 the first dozen microscopes that were used in the institution, in order that the students might acquire a more definite idea of histology and pathology than could possibly be obtained by lectures and blackboard demonstrations, the fashion of the period. For several years the only immersion lens in the institution for the study of bacteriology was loaned from his office.

The present ophthalmic clinic at the O'Fallon Dispensary was founded under his supervision in 1882, in the old dispensary building at 7th Street and Clark Avenue. Previous to this he had conducted a clinic for many years at St. Luke's Hospital. In 1894, following the removal of the college to 18th and Locust Streets, by reason of the proximity of the two clinics and because of the desire of St. Luke's to abandon its out-clinic department for lack of room, the two clinics were combined at the present location, and were practically under his care until his death.

He also supervised the present plan of instruction in ophthalmology in the University which, in practical teaching, has no superior anywhere in this branch of medicine. Our only lack has been a properly equipped hospital and laboratories for this purpose, which the wealth of St. Louis has not yet seen fit to furnish us, probably because of our leader's inability to beg for

charity, due doubtless to his feeling that it would be said of him that the purpose of such a hospital would be to aggrandize himself financially. When we first opened the clinic at the old Clark Avenue building and we were having a good attendance, I intimated to him that we were in need of an ophthalmic hospital, and that it probably could be obtained if he would take the lead in suggesting it. His answer was, "That would be begging."

For its charity and kindness to him in looking after and caring for the poor that he placed in its charge, he was ever most grateful to St. Luke's Hospital, and to its directorate, so expressing himself at one of the last staff meetings that he attended.

Frequently he was accredited with being austere, but this austerity was wholly exterior and was only exercised toward the offensive, or to forcibly clinch a point. Those who were nearest him know that by nature he was of such tender heart that it would have hurt him to kill even a noxious insect. The gentle element in his noble character was impressively revealed in the care and kindness exercised by him toward afflicted children. With the austerity was combined an exhaustless fund of keen wit and humor, which he could exercise in a convincing manner without anger, irony or sarcasm in exposing the frailties of humanity, often to the merriment of the waiting audience that ordinarily crowded his consulting rooms. Although often apparently harsh in his clear, sagacious method of searching for the truth in his professional dealing with those who sought his advice, he was a far better friend and protector to those who trusted him in the management of their troubles than was frequently recognized by them, and to the poor, and to those most in need of help, he was always a friend without thought of recompense. His contribution to this class as a helper in the community reckoned in time, service and skill, was far in excess of the regulation biblical tithe, and a typical expression of the manner in which he was ceaselessly exercising his great powers for the benefit of mankind.

JOHN GREEN.

AN ADDRESS BY WILLIAM TRELEASE, LL.D.

Bacon says: "Reading maketh a full man, . . . writing, an exact man." Doctor Green was a man of large reading and a man who wrote much.

I met him first in the fall of 1885. I remember very distinctly

the smile with which anything that was said to him was received as understood even before the words were completed, and through a quarter-century saw that smile change to the familiar less labile though never less responsive expression of later years. I remember his keen understanding of many things—art, music, the drama—which were entirely outside his own profession and its foundations even. I remember the enthusiasm with which I found he had been interested in the study that most occupied me, when he had worked under the great man Asa Gray, whom I too knew as master and friend. From the time when Doctor Green was about fifty until he left us it was my privilege to know him closely; during that time I was impressed constantly and increasingly with wonder at his breadth of interest and at the facility of understanding and expression that life had brought to him, showing an amount of reading, of the best, that few of us have the time to compass and that only one in a large number can approach, even, in assimilation.

No one who knew Doctor Green at his own table or elsewhere in conversation can have failed to catch his quick repartee, and thorough understanding of a shade of meaning that he meant to convey or that came to his ear. No one that ever heard him speak when wanting to carry a message of force could possibly have failed to note an exact use of words, carrying conviction to him who could understand. One of the great pleasures of his last year was a testimonial from the Harvard Club of St. Louis, in the form of a loving cup, given him as Honorary President of that club in recognition of long service as its active President, in which he demonstrated among many other traits of versatility an ability to outdo the classics that appealed to men in any profession.

Doctor Green was a critic—a friendly critic more commonly than a hostile critic. He was a helpful critic for his friends in those little shades of meaning that make all the difference in the world between the right and the near right carrying of an idea by words; he was a man to whom a punctuation mark was sometimes as important as a sentence.

Dr. Green, as Doctor Engler has said, even when his word was final in mid-life or later, began at the very foundation of things he was ready to undertake. One who had opportunity to watch his methods in investigation,—and to him the practice of his profession was always investigation,—could see everywhere the closeness of his power as an observer, the skill with which ex-

periment was fitted to meet question, and the understanding with which conclusions were deduced from observation and experiment. No wonder that when he wrote he wrote as an exact man; and, seeking counsel as readily as he gave it, no wonder that what he put in print is destined to stand as solid ground for the work of others.

Personally, I like still more to think of Doctor Green in a different light from this. It was my privilege, as I have said, to know him from his prime to the time when without any impairment of his faculties his work ended. I knew him as a friendly counsellor to whom one could turn at any time on any subject, sure of finding understanding aid in questions of policy, of broad problem, of detail. I went to him for such counsel from the time when with him the fire of life was flaming, to the time when it had settled to the smouldering glow which perhaps was more effective and certainly less wasteful, and through that period I never knew him to be wanting in any of those traits that make a friend and counsellor invaluable to one to whom they are accessible.

One thing deserves mention above other things: that devotion to service which has been spoken of by Doctor Fischel. We who really knew Doctor Green as he spent his life for others could not fail to note in him a marked devotion to duty and helpfulness, a self-sacrifice that goes further than any other means of carrying altruism to fruition, and a rare power of self-effacement in his dearest plans. If the Academy of Science of St. Louis is ever understood to its heart it will be found that almost from its earliest day during more than half-a-century Doctor Green was one of the few always to be counted on for interest and assistance in its every activity. As one of the men entrusted with establishing a policy which should give to the Missouri Botanical Garden the international reputation which its founder desired for it, Doctor Green, fully comprehending Henry Shaw's purposes, contributed in no small way through many years to a realization of the expectation of the great benefactor of your city—and the world recognizes that which Doctor Green labored to bring about. The possibilities that the community enjoys to-day in art, music, and the drama have rested firmly in their development at more than one point on the unobtrusive help of this man whom we mourn and in whose memory we meet.

Only last year Richard Miller expressed the wish that Doctor

Green could give him a sitting. I hope it is not yet too late for you gentlemen, interested in the medical school and in all intellectual and spiritual progress of this community, to enable Miller, who has given to you a speaking likeness of Dr. Green's life-long intimate, Baumgarten, to take from the excellent photographs that you have the traits which with his present memory of the man will enable him to put on canvas a real portrait that you can place beside those of Baumgarten, Hodgen and Mudd—the men who have made possible your now great medical school—so that the kindly soul of the man shall be evident to the students who, generations from now, may then see in his face what kind of man it was who stood with other men of his kind in self-sacrificing devotion, capable even of withdrawing his own personality, his own presence, that his dream might appear to be the plan of another if so it might be surer of realization.

At the close of the formal addresses the presiding officer dismissed the audience as follows:

If it be a worthy ambition for a man so to live and work as to leave to posterity a permanent and fragrant memory, then the sincere words of the speakers of the evening—these colleagues and friends—are evidence of the fact that Dr. Green realized a worthy ambition, for without doubt he has left to posterity a permanent and fragrant memory.

BIBLIOGRAPHY OF THE WRITINGS OF JOHN GREEN, M.D.

- City Hospitals.—Boston, Little, Brown & Co., 1861.
 Case of fracture of the thigh treated by immovable apparatus of gypsum.
 —Boston M. & S. Journal, 1863-4, lxix.
 On amputation of the thigh.—34 p. Boston M. & S. Journal, 1863-4, lxix.
 Mechanical ulcer of the stump.—Boston M. & S. Journal, 1863-4, lxix.
 Toetslynen tot bepaling van astigmatism.—Versl. Nederl. Gasth. v. Ooogl., No. 7, s. 155. Nederl. Arch. v. Gen. en Naturk. II
 On a new system for the detection and measurement of astigmatism, with an analysis of sixty-four cases of refractive anomalies observed by the aid of the method.—Trans. Amer. Ophth. Soc'y. 4th and 5th meeting, 1867-8. N. Y., 1869.
 On the modern treatment of lacrimal obstruction by dilatation of the natural passages.—16 p. St. Louis M. & S. Journal, 1868, n.s. vi.

- On the use of styles of lead in the treatment of disease of the lacrimal sac.—Trans. Amer. Ophth. Soc'y. 4th and 5th meetings, 1867-8. N. Y., 1869.
- Remarks on the use of leaden styles in the treatment of lacrimal obstructions with description of a new plan for facilitating their introduction.—Trans. Amer. Ophth. Soc'y. 6th meeting, 1869. N. Y., 1869.
- On a series of test-letters for determining the acuteness of vision.—Trans. of the Amer. Ophth. Soc'y. 4th and 5th meetings, 1867-8. N. Y., 1869.
- On a color test for astigmatism.—Trans. of the Amer. Ophth. Soc'y. 4th and 5th meetings, 1867-8. N. Y., 1869.
- An optical demonstration of the characteristic phenomena of astigmatic vision.—Trans. of the Medical Assn. of the State of Missouri, St. Louis, 1870.
- On the treatment of lacrimal obstruction by dilatation of the natural passages.—*Ibid.*
- Case of aspergillus in the external auditory meatus.—Trans. of the Amer. Otological Soc'y. 3rd meeting, 1870. N. Y., 1870.
- Remarks on cataract extraction; suggestions for securing greater precision in reporting operations and results; form of corneal section.—Trans. of the Amer. Ophth. Soc'y. 9th meeting, 1873. N. Y., 1873.
- On a color-test for ametropia, based upon the chromatic aberration of the eye.—Trans. Amer. Ophth. Soc'y. 10th meeting, 1874. N. Y., 1874.
- Iridotomy by Von Wecker's method.—Trans. of the Amer. Ophth. Soc'y. 11th meeting, N. Y., 1876. p. 352.
- Notes on the examination of the eyes of a criminal executed by hanging.—*Ibid.*, p. 354.
- Improvements in instruments and appliances for diagnosis.—*Ibid.*, 467.
- Castor oil as a menstruum for dissolving atropia for application to the eye.—*Ibid.*, p. 355.
- Remarks on association of myopia and astigmatism.—*Ibid.*, p. 318.
- Test-diagrams for the detection and measurement of astigmatism.—Trans. Amer. Ophth. Soc'y. N. Y., 1878. ii, pt. 4. 467-473.
- Stereoscopic diagrams for testing binocular vision.—*Ibid.*, 474.
- A new modification of Loring's ophthalmoscope.—*Ibid.*, 476-482.
- Improved series and arrangements of the glasses of the trial case for measuring refraction.—*Ibid.*, 483-488.
- A practical treatise on diseases of the eye, by Robert Brudenell Carter, ed., with additions and test-types by John Green, M.D.—Phil., Lea., 1876.
- Trichiasis and distichiasis.—St. Louis Courier of Medicine, 1879. i, p. 339-343; p. 593-596. (Two articles.)
- Cross-eye; its origin, prevention and treatment.—St. Louis M. & S. Journal, 1880, xxxix, 157-163.
- A case of detached retina treated by hypodermic injections of muriate of pilocarpin.—Trans. Amer. Ophth. Soc'y. 16th meeting, 1880. N. Y., 1880.
- Exhibition of a combination set of trial glasses, and a new trial frame.—Trans. Amer. Ophth. Soc'y. 16th meeting, 1880. N. Y., 1880.

- An improvement in concave spectacle lenses of high power.—*Ibid.*
- An acute glaucomatous invasion, following closely upon a single application of a very weak preparation of duboisia.—*Ibid.*
- A modified operation for discission in soft cataract.—*Ibid.*
- Case of nucleus like bodies in the lenses of a child escaping after discission.—*Ibid.*
- An operation for entropion.—*Ibid.*
- On some therapeutical applications of pilocarpin.—*Trans. Amer. Ophth. Soc'y, N. Y., 1881. iii, 302-305.*
- An operation for closed pupil with anterior synechia, using the pince-ciseaux of Wecker. *Trans. Amer. Ophth. Soc'y. N. Y., 1881. iii, 214.*
- Das Schielen.—Read before: Verein Deutscher Aerzte, St. Louis, Sept. 28, 1882.
- A case of ruptured zonula; lens continuing transparent after three years; mydriasis and loss of accommodation; increase of refraction under influence of myotics.—*Amer. Jour. Ophth., St. Louis, 1884. i, 43-47.*
- An operation for the removal of the eyeball, together with the entire conjunctival sac and lid margins.—*Amer. Jour. Ophth., St. Louis, 1884. i, 65-68.*
- Notes on some of the physiological effects and practical applications of cocaine hydrochlorate.—*Amer. Jour. Ophth., St. Louis, 1884. i, 231-7.*
- On accommodation and refraction.—*Reference Handbook of the Medical Sciences, ed. by Albert H. Buck. N. Y., Wood, 1885-93. i, 50.*
- On asthenopia.—*Ibid., i, 391.*
- On astigmatism.—*Ibid., i, 400.*
- On diplopia.—*Ibid., ii, 475.*
- On hemeralopia and nyctalopia.—*Ibid., iii, 605.*
- On hypermetropia.—*Ibid., iii, 775.*
- On ophthalmoscope, ophthalmoscopy.—*Ibid., v, 298.*
- On optometry.—*Ibid., v, 349.*
- On presbyopia.—*Ibid., vi, 22.*
- On spectacles.—*Ibid., vi, 502.*
- Die operation des Entropium.—*Historische Studie. St. Louis, 1886.*
- On the operative treatment of entropium.—*Amer. Jour. Ophth., St. Louis, 1884. i, 193-200.*
- On operation for the partial or total removal of the eyeball.—*Amer. Jour. Ophth., St. Louis, 1885. ii, 51-61.*
- On spectacle lenses of a symmetrical curvature.—*Amer. Jour. Ophth., St. Louis, 1886. iii, 53-59.*
- On the operative treatment of entropium.—*Amer. Jour. Ophth., St. Louis, 1886. iii, 363-388.*
- On a transient myopia occurring in connection with iritis.—*Trans. Amer. Ophth. Soc'y, Boston, 1887. iv, 599.*
- Test-letters for measuring the acuteness of vision, based upon the test-letters of Professor H. Snellen, and the test-letters in geometrical progression of Dr. John Green. By John Green and A. E. Ewing.—*St. Louis, 1886.*
- On certain stereoscopical illusions evoked by prismatic and cylindrical

- spectacle-glasses.—Trans. Amer. Ophth. Soc'y, Hartford, 1889. 449-456.
- Notes on 21 cases of cataract occurring in a single family.—Trans. Amer. Ophth. Soc'y, Hartford, 1890. v, pt. iii, 724-727.
- An elementary discussion on some cases of central refraction through tipped spectacle lenses.—Trans. Amer. Ophth. Soc'y, Hartford, 1890. v, pt. 111, 690-717.
- Note on the variations in the power and in the astigmatism of thin spherical, toric and cylindrical lenses in principal cases of oblique central refraction.—Trans. Amer. Ophth. Soc'y, 1895. Hartford, 1896. vii, 329-341.
- and A. E. Ewing. Hypopyon keratitis; break in Descemet's membrane preceding corneal perforation.—Trans. Amer. Ophth. Soc'y, 1896. Hartford, 1897. vii, 716-23, 3 pl.
- In memoriam, Dr. Henry Hillard Williams (1821-1895).—Trans. Amer. Ophth. Soc'y, 1896. Hartford, 1897. vii, 479-496. port.
- and A. E. Ewing. Hypopyon keratitis; break in Descemet's membrane preceding corneal perforation; passage of hydrogen peroxide and fluorescein through the corneal ulcer into the anterior chamber.—Trans. Amer. Ophth. Soc'y, Hartford, 1897-8. viii, 374-385. 3 pl.
- and A. E. Ewing. A case of melano-sarcoma of the conjunctiva and cornea of long duration.—Trans. Amer. Ophth. Soc'y, Hartford, 1898. viii, 468-471. 2 pl.
- Address at the 50th anniversary of the founding of the Academy of Science.—Trans. of the Acad. of Science. v, 16, p. xlv, 1906.
- Biography of the older Agassiz, Jean Louis Rodolphe Agassiz.—Trans. of the Acad. of Science. v. 17, p. xxxiii, 1907.
- Biography of Dr. Gustav Baumgarten.—Trans. of the Acad. of Science. v. 19, p. xli, 1910.
- Periscopic spectacles.—Am. Jour. Ophth., St. Louis, 1908. xxv, 321-324.
- Coquille protective spectacles.—Am. Jour. Ophth., St. Louis, 1909. xxvi, 321-327 p. 1 pl.
- Coquille protective spectacles. Relation of the thickness of a coquille of zero power to the principal focal lengths and to the power of its surfaces.—Am. Jour. Ophth., St. Louis, 1910. xxvii, 321-3.

MEDICAL SOCIETIES

ST. LOUIS MEDICAL SOCIETY.

OPHTHALMIC SECTION.

November 4, 1913.

Presentation of Case.—By Dr. J. Gross.

This man, 19 years old, came to the clinic at Washington University several days ago, November 1st. As you will see, he had a vascular keratitis of the right eye, which covers almost the entire cornea, excepting an oval area surrounding the center of the cornea. The entire cornea is vascularized so the iris cannot be seen and the central portion of the cornea appears grayish and hazy. I could not get a satisfactory history of lues from him; he says he had a sore on his genitals about a year ago and again three months ago. He does not give any history of secondary trouble and there are no secondary manifestations. The right eye became sore about seven weeks ago. Four days later he went to the City Hospital and remained there ten days. While there he was given salvarsan. The eye did not improve and he left the Hospital at the end of ten days. He then consulted an oculist and remained under his treatment for five weeks, but he was not satisfied with his treatment. It seems that this oculist proposed enucleation, and that is a matter which I would like you to consider to-night, as to whether or not there is any reason why there should be an enucleation. The tension is a little below normal. We have placed him on mixed treatment. Our diagnosis is luetic trouble, either acquired or congenital. I think it is quite an unusual case. We did not have a Wassermann made.

DISCUSSION.

Dr. Woodruff: I would like to know if a tuberculin test has been made?

Dr. Green: Have there been any signs of sympathetic irritation?

Dr. Gross: No tuberculin test was made. I have not seen any signs of sympathetic irritation and I cannot see on what grounds the oculist proposed enucleation.

Dr. Shoemaker: Was there any ophthalmoscopic examination made of the good eye?

Dr. Gross: No. I was quite anxious to have the Section see the case and did not have time to make an ophthalmoscopic examination, as the patient has so much photophobia.

Both Wassermann and tuberculin tests, made later, were negative, and examination of the fundus of the good eye showed nothing abnormal.

Right eye, V. perception of light. Left eye, V. 20/38.

*Presentation of Cases of Glaucoma Operated on by Col. Elliot.—
By Dr. Clarence Loeb.*

The first case, Mrs. L. F., showed a beautiful result as far as the operation was concerned. There was good filtration, but the eye was no softer and the vision was practically no better than the other eye which had been treated with eserine and pilocarpine. The second case, Mr. W. R., has had an acute conjunctivitis following the operation, but this subsided promptly under treatment without infecting the interior of the eye. There was good filtration and the tension was normal. The pupil was elongated, owing to the fact that a portion of the sphincter had been excised at the time of the operation. The vision had been increased from nearly 6/15 to nearly 6/8 with the proper correcting glasses. The other eye treated with eserine and pilocarpine had retained its vision of 6/6 nearly. The third patient, Mrs. S., had run a very unfavorable course. Immediately after the operation, there was a low grade iritis, which persisted in spite of treatment. After about two weeks' treatment, patient stated that ever since the operation she had seen halos around lights in both eyes. The treatment was changed to eserine and pilocarpine and the halos promptly disappeared, while the other symptoms in the operated eye gradually improved. At the present time the eye is still somewhat red, no halos seen, vision 1/12 (before operation nearly 6/15). The other eye had a vision of 6/15 nearly, as opposed to 6/8 before the operation.

From these three cases, I do not see any particular benefit that the operation offered over the use of miotics. I recall another case where, after an ordinary iridectomy in an eye whose vision and visual fields were diminishing, there was a sudden fall of vision (excentric to 6/30) and almost total loss of the visual

field. The other eye, however, had retained a vision of 6/6 and good visual fields under eserine and pilocarpin. I believe that the operative measure proposed by Col. Elliot is a good one where the patients cannot be kept under observation, but I would always use miotics when I could see the patient regularly and at once if any untoward symptoms arose. I believe that further advance in the treatment must be not along operative lines, but along lines leading to a determination of the cause of the disease and its elimination and prevention.

DISCUSSION.

Dr. Gross: How about the tension in these three cases?

Dr. Loeb: The tension in all of these cases was not measured, but in all three was slightly increased before the operation. Since the operation in my opinion it is about the same. Slightly lower, perhaps, but no better than in the unoperated eye, in which I have used eserine and pilocarpin.

Dr. W. A. Shoemaker: What is Col. Elliot's opinion regarding the indications and the contra-indications of his operation in simple chronic glaucoma and what results has he obtained?

Dr. Green: I believe I can answer Dr. Shoemaker's question. That question came up and was one of the principal points in the discussion at Chattanooga. Dr. Reber read a paper on "Trephining in Glaucoma" and incidentally he stated in regard to chronic glaucoma, that he would not perform any operation so long as vision and fields did not diminish and tension did not go above normal. This view, which, I presume, is shared by most American surgeons, was strongly opposed by Col. Elliot. He compared chronic glaucoma to appendicitis; after one attack you are probably going to have another attack, in fact, you are always going to live in the expectation of repeated attacks. He believes that each case of chronic glaucoma ought to be operated as soon as the disease is definitely recognized.

Dr. Shahan: I saw a case of Dr. Ewing's in which an iridectomy had been accidentally performed in one eye, in the man's youth, many years before he came to the office. In the other eye he had glaucoma simplex, which caused that eye to become blind. I have always believed that the traumatic iridectomy, in this case, acted as a prophylactic and prevented the onset of glaucoma.

Dr. Wiener: Col. Elliot also made the remark that he thought the trephining operation should always be made in both eyes.

And if there were no symptoms, even in the other eye, that he always advised trephine operation in both eyes. First on the affected eye, then on the healthy one, because he considered that a prophylactic measure.

Dr. Ewing: In this connection, Col. Elliot remarked, that in India a large proportion of the cases showed only constriction in the visual field, cupping of the disk and visual failure, with very little elevation of the tension, yet he always resorted to the operation with favorable results.

Dr. Post: As we are quoting, I might also quote this as it possibly throws a little light upon the opinion of so high an authority as Col. Elliot. He says that his patients in Madras frequently came long distances. So when they came with suspicious conditions, and as very likely it was their only opportunity, he felt obliged to operate where he would not if the man were his next door neighbor and he could keep track of him. Of course, I take it that very few of us can feel that any operation is absolutely free from a certain amount of risk. I can say that Col. Elliot is very pronounced in his idea that if there is any suggestion of glaucoma, the eye should be trephined, and I think in his mind the glaucoma in one eye makes it probable that it will attack the other and that it may be best to operate on the second eye as a prophylactic measure, where it is probably the only time in his life when the man can get the services of a competent ophthalmic surgeon.

Dr. Jennings: Unfortunately, I was not able to be present at Col. Elliot's operations. As regards the question how soon are we to operate? it seems to me that the enthusiasts in this operation are inclined to operate at once. Recently, I have had under my care an English lady, who developed glaucoma, and for two years I have kept the tension normal and the field the same by the use of eserine. About three months ago she started back to England and I gave her instructions and a letter to a London ophthalmologist, and I have just learned that she had hardly set foot in England before both eyes were operated upon. In all of the cases of this operation, I reported last year, I always secured the conjunctival flap after the operation by several stitches. I think this is a wise plan and saves trouble. Yesterday a gentleman came to me who has been blind in both eyes for five years from glaucoma. A southern surgeon had done the Elliot operation, i.e., trephining at the limbus, but had made a trephine

opening in the sclera, 5 mm. back of the limbus and the tension is now perfectly normal. It seems to me that this case is of interest, as showing the mere opening into the sclera and covering it over with the conjunctiva is just as efficacious as if it had been done at the limbus.

Dr. Loeb: It seems to me there are two points in regard to Col. Elliot's operation that we must keep in mind. As far as the operation itself is concerned, it seems to be easy except for the splitting of the cornea. I believe any one who has had experience as an operator could do the operation. But I do not believe the length of time the operation has been in use is sufficient for us to form a judgment as to the final outcome of these cases. We do not know how they are going to turn out in five years from now. These holes may close up. There may be an increase in tension. In the second place, after all, the increase of intraocular tension is not the disease glaucoma. It may cause the bad results, the crushing out of the optic nerve fibres and the excavation of the disc, but there is more to the disease than this. Because we can relieve the increase of tension is no reason why we should cease our efforts to determine its cause. Only after we have succeeded in combating the aetiology of glaucoma will we be able to speak of its cure. As a symptomatic treatment, I believe the Elliot operation is one of the best, if not the best.

Dr. Charles: Perhaps the case I have to report will answer some of these questions. Dr. Jennings spoke of a case under his care for two years. The following concerns an eye almost normal for two years before an acute attack:

On July 26, 1905, Mrs. L. S. E., 57, under my observation at that time fourteen years, telephoned for relief from a severe neuralgic pain over the right eye with redness. She received cocain, gr. 1, adrenalin 1, in two ounces of water. On the next morning the tension was normal and it was decided that she did not then have glaucoma. With correction vision was normal R. & L. Except for correction of the refraction and a rather frequent conjunctivitis patient had been free from treatment most of the time until October, 1911, when the tonometer showed OD. 20 mm., and O.S. 26 mm., and her blood pressure varied from 140 to 118 mm. She was given pilocarpin for home use with which complete miosis was obtained. Rainbow vision was noted at times. The pupil of the right eye was slightly larger

than that of the left. Reactions all normal. O.S. 19/15. No special change until June, 1913, when tension was O.D. 25, O.S. 23 mm., and the patient was complaining of neuralgia around the right eye. At no time did I see her in an attack. Her discs were slightly cupped. In my absence, September 3rd, Dr. Hardy sent her to St. Luke's with an acute attack of glaucoma. He used eserine freely in both eyes, gave the patient cascara and calcium chloride, and upon my return, September 14th, her vision was OD. 19/19+ and O.S. 19/15. Tension 23 mm. R. and L. Fields only slightly contracted nasally, an unusually good result. She was operated upon by Col. Elliot Saturday, October 26th. The operation was executed beautifully upon a well-behaved patient. Atropin was used every day for three days. The whole area is now oedematous, the anterior chamber more shallow than formerly and her refraction has changed so much from displacement of the lens forward that with the old glasses her vision is only 19/60, while -1. sph. in addition is required to reach her old acuity of 19/19. The patient is still too nervous to obtain an accurate result with the tonometer, but the intraocular pressure is perceptibly lower than that of the left eye and very much lower than before the operation. The coloboma is a scarcely perceptible slit in marked contrast to the deformity seen after an iridectomy for glaucoma. In regard to the preparation of the nervous American patient, it seems to me that bichloride 1-3000 in the eye and scrubbing the conjunctival sac with the application are unnecessarily severe. I believe in the taking of smears and cultures beforehand and appropriate preliminary treatment, as well as the use of thorough irrigation at the time of the operation. Also, I believe that it is a good plan to use normal saline solution during the rather long operation, for the purpose of preventing desquamation of corneal epithelium. These are mere details, however, and not intended to be a criticism on the operation itself.

Dr. Green: I presume most of the members of the Section will agree that the vigorous scrubbing of the conjunctiva, as practiced by Col. Elliot, is unnecessarily severe, at least for American patients. He acquiesced to my suggestion that this fact of the preliminaries be dispensed with and contented himself with squeezing the Meibomian glands and douching the sac with 1-3000 bichloride.

Dr. Charles: The main point about this patient of mine, as

you noticed, was that it was visually almost a normal eye. It had been followed for two years since October, 1911, kept under control with pilocarpin at home, until she came to Dr. Hardy with acute glaucoma and a blind eye, and he brought it out of the attack with almost normal vision.

Dr. Post: Did Col. Elliot omit the scrubbing process entirely after that operation?

Dr. Green: Not in any that I witnessed.

Dr. Ewing: Here I wish to add that among the fifteen operations performed in my presence, the most quiet patients were four at St. Luke's Hospital, with whom a 1 per cent. holocain solution was used in the eyes every ten minutes for half an hour preceding the cocain.

Dr. Charles: As to holocain, it seems to me that the use of a local anæsthetic, far enough ahead to have it soak in thoroughly, is to have the patient comfortable and easy to handle without the toughening effect on the cornea by the too frequent use of cocain. Just before the operation I use cocain.

Dr. Green: It may be of interest to the members to know of one case that Col. Elliot operated for me in which, after the removal of the button, there was no prolapse of the iris. In that case the Colonel did not make any attempt to do an iridectomy. He fears that damage may be done by an attempt to get out a peripheral scrap of the iris in those cases in which the iris fails to present.

Dr. Jennings: It seems to me that if the ideal section were made the iris would prolapse.

Dacryo-Cystitis, caused by a Membranous Closure of the Nasal Duct.—By Drs. Meyer Wiener and Wm. E. Sauer.

The importance of insisting on a thorough and careful examination of the nasal end of the tear duct is emphasized by the cases here reported. I well know that the thought is ever uppermost with the majority of practicing ophthalmologists of the existence of a close relationship between lacrimal obstructions and inflammation of the nasal mucous membrane, but I also believe as the appended cases will show, that sufficient care is not always taken in determining the exact cause of obstruction of the tear duct.

Case 1.—Mrs. A. D., 70 years of age, native, American, consulted me on October 19, 1905, for a mucocele of the right sac,

which she stated had been present for more than a year. Previous to that, however, she had been troubled with tearing for a period of several years. She had consulted several ophthalmologists, had been subjected to numerous probings and washings of the sac with little or no benefit having been derived. She insisted that she had no nasal catarrh, was not subject to colds and demonstrated that she could easily breathe through either nostril. I washed out the sac but was unable to force any fluid through the nose, the solution regurgitating through the upper punctum. A No. 6 Bowman probe was easily passed through the duct to the nose.

It was with difficulty that she was persuaded to have an examination of the nose made; the report showed, however, no abnormality of the nasal cavity. At the instance of Dr. Sauer, another examination was made at his office with the probe introduced into the nose. A membranous obstruction prevented the probe point from entering the nasal cavity, although it could be distinctly felt and seen through this thin membranous obstruction. On October 26th the obstruction was removed by Dr. Sauer, after which fluid readily passed through the nose and the mucocele permanently disappeared. This patient was last seen by me January 30, 1911, and was at that time free from any apparent trouble with the lacrimal apparatus.

Case 2.—Mrs. B. O., 50 years of age, native German, consulted me July 10, 1913, suffering with chronic dacryo-cystitis of the right sac. She had had many months of treatment by various ophthalmologists, but had given up in despair, and had had no treatment for eighteen months previous to my examination. The last treatment had consisted of expressing the contents and the passing of Bowman probes. The physician had sent her to a rhinologist, but the report came to him that the nose was in perfect condition. I also experienced some difficulty in having another examination made in this case, but succeeded in persuading the patient to be examined with the introduced probe, which examination was made August 1, 1913. A No. 4 Bowman probe slipped easily down into the nose. Examination of the nose showed that here also the free exit of the probe was prevented by the presence of a thin membrane covering the opening of the duct; this obstruction was slit on August 14th, after which time the pus from the sac drained through the nose. This opening soon closed, however, necessitating an excision of the membrane

about four weeks later. The patient has been free from accumulation of pus in the sac and also from excessive tearing for the last month.

I wish to lay particular stress upon the importance of the nasal examination being made with the probe being introduced. This can be done by the ophthalmologist himself, or by the nose specialist if he is practiced in the art. And there are some who are quite proficient.

In a search through the literature, de Schweinitz is the only authority that I have been able to find who described a similar condition and emphasizes the necessity of exposing the lower entrance of the nasal duct into the inferior meatus by means of the nasal speculum, after the probe had been introduced.

(Continued in May Number.)